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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
COLUCCI, MICHAEL C	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/725,771	RAO ET AL.	
	Examiner	Art Unit	
	MICHAEL C. COLUCCI	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20 and 24-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20 and 24-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/26/2009 has been entered.

Response to Arguments

2. Applicants arguments with respect to claims 20 and 24-32 have been considered but are moot in view of the new grounds of rejection. After further consideration of the amended claims in view of the Remarks filed 01/26/2009 and in light of the specification, Examiner has incorporated Araki US 20020022898 A1 (hereinafter Araki) in view of Kodama US 20020013633 A1 (hereinafter Kodama). Araki explicitly teaches the identical process of the invention as part of a multiplexing phase, as an obvious variant of a reverse order demultiplexing phase. Further, though it is well known to reverse encoding through a decoding phase by writing data to and from an instruction memory, Examiner has also included Kodama to explicitly support an obviousness rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 20-22, 24-26, 28, 29, 31, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Araki US 20020022898 A1 (hereinafter Araki) in view of Kodama US 20020013633 A1 (hereinafter Kodama).

Re claims 20 and 28, Araki teaches a system for decoding an audio signal, said system comprising:

one or more audio decoding circuits for performing one or more functions on a frame of encoded audio data, wherein the one or more audio decoding circuits ([0012] & Fig. 2) comprise;

a Huffman decoder for Huffman decoding the frame of encoded audio data ([0012-0013] & Fig. 2 item 10);

a prediction decoder for prediction decoding the frame of encoded audio data ([0012-0013] & Fig. 2 item 6); and

an intensity coupling circuit for intensity coupling the frame of encoded audio data ([0012-0013] & Fig. 2 item 5)

a memory for storing results of the Huffman decoding of the frame of encoded audio data, the results of the prediction decoding of the encoded audio frame, and the

results of intensity coupling the frame of encoded audio data, wherein the results of the prediction decoding for the frame of encoded audio data at least partially overwrite the results of the Huffman decoding of the frame of encoded audio data, and wherein the results of the intensity coupling for the frame of encoded audio data at least partially overwrite the results of the prediction decoding of the frame of encoded audio data ([0012-0013] & Fig. 2 transition from item 6 to item 10).

However, Araki fails to teach results of the intensity coupling for the frame of encoded audio data at least partially overwrite the results of the prediction decoding

Though Araki explicitly teaches a prediction phase, Kodama teaches (like the present invention [0019]) an instruction memory, wherein Kodama teaches the instruction memory 13 stores an instruction code with respect to the general purpose processor 10. Furthermore, the data memory 14 stores various data to be processed by the general purpose processor 10. Furthermore, the general purpose processor 10 performs processing in accordance with the instruction code stored in the instruction memory 13. In the embodiment, the general purpose processor 10 captures and buffers the data (audio streams) primarily required in the audio coprocessor 11. Then, the general purpose processor 10 fetches data such as various tables, a filter bank coefficient and the like corresponding to the progress stage of the audio data reconstruction processing, and delivers the data to the audio coprocessor 11. Further, the general purpose processor 10 stores data obtained by the audio coprocessor 11 in the data memory 14, and controls the DMA controller 15 (Kodama [0034-0035]).

Further, Kodama demonstrates a demultiplexing routine nearly identical to that of the present invention with the exception of prediction being shown (Kodama Fig. 3), wherein Kodama furthermore teaches two memories present which write information back and forth based on the function of each stage of Fig. 3 (Kodama Fig. 4a and 4B).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Araki to incorporate results of the intensity coupling for the frame of encoded audio data at least partially overwrite the results of the prediction decoding as taught by Kodama to allow for the progressive retrieval of data at various stages during an audio (i.e. MPEG-2, etc.) demultiplexing routine, wherein audio data can be freely captured relative to an instruction memory that transfers information along a series of functions (i.e. prediction, gain, quantization, Huffman/noiseless, etc.) (Kodama [0034-0035]).

Re claims 24 and 31, Araki teaches the system of claim 22, wherein the one or more audio decoding circuits further comprise a filter bank ([0012-0013] & Fig. 2 item 3)

Re claims 25 and 32, Araki teaches the system of claim 22, wherein the one or more circuits further comprises a temporal noise shaper ([0012-0013] & Fig. 2 item 4)

Re claim 26, Araki teaches a system for decoding an audio signal, said system comprising:

a first audio decoding circuit for performing a first audio function on a frame of encoded audio data ([0012-0013] & Fig. 2), wherein the first audio decoding circuit is selected from a group consisting of an inverse quantizer for inverse quantizing the frame of encoded audio data, a bitstream demultiplexer for demultiplexing the frame of encoded audio data, and a filter bank for filtering the frame of encoded audio data;

a second audio decoding circuit for performing a second audio function on a frame of encoded audio data, wherein the second audio decoding circuit is selected from a group consisting of a bitstream demultiplexer for demultiplexing the frame of encoded audio data a filter bank for filtering the frame of encoded audio data, and an intensity coupler for intensity coupling the frame of encoded audio data a memory for storing outputs of the first audio decoding circuit ([0012-0013] & Fig. 2)

However Araki fails to teach the first audio decoding circuit is selected from a group consisting of an *inverse quantizer for inverse quantizing* the frame of encoded audio data, a bitstream demultiplexer for demultiplexing the frame of encoded audio data, and a filter bank for filtering the frame of encoded audio data

wherein the memory stores the outputs of the second audio decoding circuit on the frame over at least a portion of the results of the first audio decoding circuit on the frame

Kodama teaches (like the present invention [0019]) an instruction memory, wherein Kodama teaches the instruction memory 13 stores an instruction code with respect to the general purpose processor 10. Furthermore, the data memory 14 stores

various data to be processed by the general purpose processor 10. Furthermore, the general purpose processor 10 performs processing in accordance with the instruction code stored in the instruction memory 13. In the embodiment, the general purpose processor 10 captures and buffers the data (audio streams) primarily required in the audio coprocessor 11. Then, the general purpose processor 10 fetches data such as various tables, a filter bank coefficient and the like corresponding to the progress stage of the audio data reconstruction processing, and delivers the data to the audio coprocessor 11. Further, the general purpose processor 10 stores data obtained by the audio coprocessor 11 in the data memory 14, and controls the DMA controller 15 (Kodama [0034-0035]).

Further, Kodama demonstrates a demultiplexing routine nearly identical to that of the present invention with the exception of prediction being shown (Kodama Fig. 3 items 42 and 40), wherein Kodama furthermore teaches two memories present which write information back and forth based on the function of each stage of Fig. 3 (Kodama Fig. 4a and 4B).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Araki to incorporate the first audio decoding circuit is selected from a group consisting of an inverse quantizer for inverse quantizing the frame of encoded audio data, a bitstream demultiplexer for demultiplexing the frame of encoded audio data, and a filter bank for filtering the frame of encoded audio data, wherein the memory stores the outputs of the second audio decoding circuit on the frame over at least a portion of the results of the first audio

decoding circuit on the frame as taught by Kodama to allow for the progressive retrieval of data at various stages during an audio (i.e. MPEG-2, etc.) demultiplexing routine, wherein audio data can be freely captured relative to an instruction memory that transfers information along a series of functions (i.e. prediction, gain, quantization, Huffman/noiseless, etc.) (Kodama [0034-0035]).

Re claim 27, Araki teaches the system of claim 26, wherein the first audio decoding circuit comprises a filter bank for filtering the frame of encoded audio data and wherein the second audio decoding circuit comprises a bitstream demultiplexer ([0012-0013] & Fig. 2 item 5), and further comprising:

However, Araki fails to teach wherein the memory stores the output of the intensity coupler over at least a portion of the results of the second audio decoding circuit

Kodama teaches (like the present invention [0019]) an instruction memory, wherein Kodama teaches the instruction memory 13 stores an instruction code with respect to the general purpose processor 10. Furthermore, the data memory 14 stores various data to be processed by the general purpose processor 10. Furthermore, the general purpose processor 10 performs processing in accordance with the instruction code stored in the instruction memory 13. In the embodiment, the general purpose processor 10 captures and buffers the data (audio streams) primarily required in the audio coprocessor 11. Then, the general purpose processor 10 fetches data such as

various tables, a filter bank coefficient and the like corresponding to the progress stage of the audio data reconstruction processing, and delivers the data to the audio coprocessor 11. Further, the general purpose processor 10 stores data obtained by the audio coprocessor 11 in the data memory 14, and controls the DMA controller 15 (Kodama [0034-0035]).

Further, Kodama demonstrates a demultiplexing routine nearly identical to that of the present invention with the exception of prediction being shown (Kodama Fig. 3 items 42 and 40), wherein Kodama furthermore teaches two memories present which write information back and forth based on the function of each stage of Fig. 3 (Kodama Fig. 4a and 4B).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Araki to incorporate the memory stores the output of the intensity coupler over at least a portion of the results of the second audio decoding circuit as taught by Kodama to allow for the progressive retrieval of data at various stages during an audio (i.e. MPEG-2, etc.) demultiplexing routine, wherein audio data can be freely captured relative to an instruction memory that transfers information along a series of functions (i.e. prediction, gain, quantization, Huffman/noiseless, etc.) (Kodama [0034-0035]).

Re claim 29, Araki teaches the method of claim 28, further comprising:

Huffman decoding the frame of encoded audio data ([0012-0013] & Fig. 2 item 10);

However, storing results of Huffman decoding the encoded audio data in the memory over at least another portion of the results of the one or more audio decoding functions comprising decoding ([0012-0013] & Fig. 2 transition from item 6 to item 10, merely replacing data after adjustment).

Re claim 30, Araki teaches the system of claim 22, wherein the one or more audio decoding circuits further comprises an intensity coupling circuit ([0012-0013] & Fig. 2 item 5).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Colucci whose telephone number is (571)-270-1847. The examiner can normally be reached on 9:30 am - 6:00 pm, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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